AS
36
.A531

UNIV. OF MICH.
NOV 18 '9[illegible]

PROCEEDINGS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY.

VOL. II. MARCH & APRIL, 1841. No. 17.

Stated Meeting, March 5.

Present, twenty-eight members.

Mr. DU PONCEAU, President, in the Chair.

A letter was received from Mr. William B. Wood, dated 1st March, 1841, accompanying a further donation of newspapers published in the English language, at Canton.

The following donations were announced:—

TO THE LIBRARY.

Flora Batava, ou Figures et Descriptions de Plantes Belgiques, &c. Liorn, 120. 4to.—*From H. M. the King of the Netherlands.*

Journal of the Asiatic Society of Bengal, N. S. Nos. 91 to 96, July to Dec., 1836, inclusive. 8vo.—*From the Society.*

The American Journal of Science and the Arts, conducted by Professor Silliman and Benjamin Silliman, Jr. Vol. XL. No. 1. Jan. 1841. 8vo.—*From the Editors.*

Journal of the Franklin Institute. 3d Series. Vol. I. Nos. 1 & 2. Jan. and Feb., 1841. 8vo.—*From the Institute.*

Lithographic Plates, illustrative of the Geology of New York.—*From Mr. Vanuxem.*

M'Elroy's Philadelphia Directory, and Williams's New York Annual Register, for 1840.—*From Mr. Du Ponceau.*

Catalogue of the Pennsylvania State Library, &c. 1839. 8vo.—*From the Hon. J. B. Anthony.*

The Canton Register, from Jan. 1830, to Aug. 1833. Fol.—*From Mr. William B. Wood.*

E OTIS KENDALL

The Chinese Courier, from July, 1831 to Sept., 1833. 3 Vols. Fol. *From the same.*

The Chinese Repository, from May, 1832 to April, 1834. 2 Vols. 8vo.—*From Mr. Vaughan.*

Traité Élémentaire et Complet d'Ornithologie, &c., par F. M. Daudin. Paris, 1800. 2 Vols. 4to.—*From the same.*

Leçons de Géologie, données au Collége de France, par J. C. Delamétherie. Paris, 1816. 3 Vols. 8vo.—*From the same.*

FOR THE CABINET.

A donation was made to the Cabinet by Dr. Dunglison, of a specimen of the Chinese printing blocks, which had been presented to him by W. B. Driver, M.D., of Macao.

The Committe, consisting of Mr. Nicklin, Dr. Griffith, and Dr. Hays, to whom was referred a paper, read by Mr. Lea on the 21st Dec., 1838, entitled "On the Melania Cincinnatiensis," reported in favour of its publication in the Transactions; which was thereupon ordered.

The same Committee, to whom was referred the continuation by Mr. Lea, of his paper "On Fresh Water and Land Shells," read at the last meeting, reported in favour of its publication in the Transactions; which was thereupon ordered.

In this paper Mr. Lea describes fifty-seven new species; nearly the whole of them from this country:—

Unio Sapotalensis. Testâ ellipticâ, subinflatâ, inæquilaterali, posticè subbiangulatâ; valvulis crassis; natibus vix prominentibus; epidermide luteâ, dense radiatâ; dentibus cardinalibus subgrandibus; lateralibus magnis subrectisque; margaritâ subaureâ et valdè iridescente. *Hab.* Sapotal River, near Tlocatalpam, Mex.—*Dr. Burrough.*

Unio Tecomatensis. Testâ ellipticâ, inflatâ, inæquilaterali, posticè subbiangulatâ; valvulis crassis; natibus subprominentibus; epidermide subnigrâ, nitidâ; dentibus cardinalibus magnis; lateralibus magnis subcurvisque; margaritâ vel purpureâ vel salmonis colore tinctâ et iridescente. *Hab.* Tecomate River, near Tlocatalpam, Mex.—*Dr. Burrough.*

Unio Rajahensis. Testâ triangulari, inflatâ, inæquilaterali, posticè angulatâ; valvulis crassis; natibus valdè prominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus magnis; lateralibus sublongis curvisque; margaritâ albâ et valdè iridescente. *Hab.* The Rajah's tanks, Calcutta.—*Dr. Jay.*

Unio Bigbyensis. Testâ subtriangulari, compressâ, inæquilaterali, posticè angulatâ; valvulis subcrassis; natibus prominentibus; epidermide luteâ, valdè radiatâ; dentibus cardinalibus magnis, erectisque; lateralibus magnis subrectisque; margaritâ vel albâ vel salmonis colore tinctâ. *Hab.* Big Bigby Creek, Maury C. Tenn.—*T. R. Dutton.*

Unio crocatus. Testâ ellipticâ, inflatâ, inæquilaterali, posticè angulatâ; valvulis tenuibus; natibus prominentibus; epidermide croceâ, radiatâ, nitidâ; dentibus cardinalibus parvis; lateralibus longis curvisque; margaritâ salmonis colore tinctâ et iridescente. *Hab.* Savannah River, Geo.—*T. R. Dutton.*

Unio callosus. Testâ ellipticâ, compressâ, inæquilaterali, posticè angulatâ; valvulis crassis; natibus prominentibus; epidermide luteo-fuscâ, nitidâ; dentibus cardinalibus parvis; lateralibus longis curvisque; margaritâ albâ et iridescente. *Hab.* Ohio Canal, 12 miles below Columbus.—*Dr. Jay.*

Unio Duttonianus. Testâ valdè transversâ, cylindraceâ, valdè inæquilaterali, posticè angulatâ; valvulis subcrassis; natibus vix prominentibus; epidermide tenebroso-fuscâ, obsolete radiatâ; dentibus cardinalibus minimis; lateralibus longissimus rectisque; margaritâ albâ et iridescente. *Hab.* Ogechee Canal, Savannah, Geo.—*T. R. Dutton.*

Unio Georgianus. Testâ ellipticâ, subcompressâ, inæquilaterali, posticè subangulatâ; valvulis subtenuibus; natibus subprominentibus; epidermide luteo-fuscâ; dentibus cardinalibus parvis; lateralibus brevibus rectisque; margaritâ albâ. *Hab.* Stump Creek, Geo.—*T. R. Dutton.*

Anodonta Montezuma. Testâ obovatâ, subinflatâ, valdè inæquilaterali; valvulis tenuibus; natibus prominentibus; epidermide luteâ viridique, rugosâ; margaritâ albâ et iridescente. *Hab.* Central America.—*Dr. Jay.*

Anodonta globosa. Testâ rotundâ, valdè inflatâ, inæquilaterali; valvulis tenuibus; natibus prominentibus, undulatis; epidermide viridi, obsolete radiatâ; margaritâ cæruleo-albâ et iridescente. *Hab.* Concha Lake, near Tlocatalpam, Mex.—*Dr. Burrough.*

Helix Tennesseensis. Testâ suprà plano-convexâ, subtus convexâ, luteâ, obliquo-striatâ, umbilicatâ; spirâ brevi; suturis subimpressis; anfractibus quinis subconvexis; aperturâ lunatâ; labro intus incrassato. *Hab.* Cumberland Mountains, Tenn.—*S. M. Edgar.*

Carocolla Edgariana. Testâ suprà subplanâ, subtus convexâ, rufo-fuscâ, irregulariter striatâ, imperforatâ; spirâ brevi; suturis vix impressis; anfractibus quinis planulatis; aperturâ angustissimâ; columellâ dentem unicum longum et laminatum habente; labro incrassato, in medio incisso. *Hab.* Cumberland Mountains, Tenn.—*S. M. Edgar.*

Bulimus Jayanus. Testâ ovato conicâ, crassâ, suprà albidâ, subtus castaneâ, perforatâ; anfractibus senis, subconvexis; aperturâ ellipticâ; labro reflexo, albo margine lineato; columellâ albâ, lævi. *Hab.* Java?

Achatina turbinata. Testâ turbinatâ, albidâ obliquo-fasciatâ et maculatâ; striis minutis decussantibus, subcarinatâ; suturis impressis; anfractibus senis, convexis, infrà suturos impressis; aperturâ parvâ, ovatâ; columellâ incurvâ. *Hab.* Liberia.—*Dr. Blanding.*

Achatina striata. Testâ subcylindraceâ, corneâ, tenui, longitudinaliter elegantissimeque striatâ; suturis impressis; anfractibus octonis, subconvexis; aperturâ parvâ, ellipticâ; columellâ incurvatâ. *Hab.* Liberia.—*Dr. Blanding.*

Succinea gracilis. Testâ longo-ovatâ, obliquâ, exsertâ, subdiaphanâ, striatâ, pallido luteâ; spirâ elevatâ; suturis impressis; anfractibus subconvexis; aperturâ longo-ovatâ. *Hab.*—Java?

Succinea Wardiana. Testâ obliquo-ovatâ, subnitidâ, diaphanâ, obsolete stri-

atâ, luteâ; spirâ breviusculâ; suturis subimpressis; anfractibus ternis, convexis; aperturâ subrotundâ. *Hab.* Ohio.—*Dr. Ward.*

Succinea Totteniana. Testâ obliquo-ovatâ, subnitidâ, subdiaphanâ, obsolete striatâ, corneâ; spirâ brevi; suturis impressis; anfractibus ternis, convexis; aperturâ ellipticâ. *Hab.* Newport, R. I.—*Col. Totten, U. S. Army.*

Succinea Nuttalliana. Testâ longo-ovatâ, obliquâ, subnitidâ, diaphanâ, striatâ, pallido luteâ; spirâ subelevatâ; suturis impressis; anfractibus ternis, subconvexis; aperturâ longo-ovatâ. *Hab.* Oregon.—*Prof. Nuttall.*

Succinea aurea. Testâ obliquo-ovatâ, nitidâ, diaphanâ, lævi, aureâ; spirâ subelevatâ; suturis impressis; anfractibus ternis, convexis; aperturâ ovatâ. *Hab.* Springfield, Ohio.—*T. G. Lea.*

Succinea Candéana. Testâ obliquo-ovatâ, subnitidâ, obsolete varicosâ, diaphanâ, aureâ; spirâ brevi; suturis subimpressis; anfractibus ternis, inflatis, aperturâ lato-ovatâ. *Hab.* Martinique.—*Lieut. Candé.*

Succinea fulgens. Testâ obliquo-ovatâ, fulgens, diaphanâ, striatâ, aureâ; spirâ subelevatâ; suturis impressis; anfractibus ternis, convexis; aperturâ lato-ovatâ. *Hab.* Cuba.—*M. Poey.*

Succinea Oregonensis. Testâ obliquâ, tenui, rugoso-striatâ, rufâ, subdiaphanâ; spirâ exsertâ; suturis valdè impressis; anfractibus ternis, inflatis; aperturâ magnâ, lato-ovatâ. *Hab.* Oregon.—*Prof. Nuttall.*

Succinea inflata. Testâ subrotundâ, inflatâ, tenui, lacteâ; spirâ brevi; suturis subimpressis; anfractibus ternis, rotundatis; aperturâ lato-ovatâ. *Hab.* South Carolina.—*Prof. Ravenel.*

Planorbis regularis. Testâ subglobosâ, supernè subplanâ, subtus angusto-umbilicatâ, pellucidâ, pallido-luteâ, obsolete striatâ; anfractibus ternis, superne carinatis; labro acuto, marginato, intus incrassato; aperturâ ovatâ. *Hab.* U. States.

Planorbis Buchanensis. Testâ sublenticulari, supernè subconvexâ, ad periphæriam carinatâ, subtus angusto-umbilicatâ, vel corneâ vel subfuscâ, lævi; anfractibus ternis, ad peripharíam carinatis; labro acuto; aperturâ rotundâ. *Hab.* Near Cincinnati, Ohio.—*R. Buchanan.*

Planorbis bellus. Testâ orbiculari, supernè plano-concavâ, subtus late umbilicatâ, virido-luteâ, crebissime et elegantissime striatâ; anfractibus quaternis, supernè carinatis, subtus subcarinatis; labro acuto; aperturâ parvâ, subrotundâ, intus rufo-fuscâ. *Hab.* Tenn.—*Dr. Troost.*

Physa Hildrethiana. Testâ ellipticâ, subcompressâ, elongatâ, subpellucidâ; spirâ obtuso-elevatâ; anfractibus quinis; labro marginato; aperturâ longâ, compressâ. *Hab.* A Lake in Illinois.—*Dr. Hildreth.*

Physa inflata. Testâ inflatâ, tenebrosâ, subpellucidâ; spirâ subelevatâ, acuto-conicâ; anfractibus quinis; labro marginato inflatâ; aperturâ latâ. *Hab.* Virginia, between the Salt Sulphur and the Sweet Spring.—*P. H. Nicklin.*

Physa Troostensis. Testâ ellipticâ, subcrassâ, luteo-fuscâ, lævi; spirâ obtusâ; suturis subimpressis; anfractibus quinis, subconvexis; labro marginato, intus incrassato; aperturâ parvâ, ovatâ, contractâ. *Hab.* Near Nashville, Tenn.—*Dr. Troost.*

Lymnea Philadelphica. Testâ ovato-conicâ, tenui, striatâ, nitidâ, diaphanâ, subaureâ, imperforatâ; spirâ subelevatâ; suturis valdè impressis; anfractibus quinis, convexis; aperturâ angusto-ellipticâ. *Hab.* Schuylkill, near Philadelphia.

Lymnea Griffithiana. Testâ ovato-conicâ, tenui, substriatâ, nitidâ, subdiaphanâ, luteo-corneâ, perforatâ; spirâ breviusculâ; suturis impressis; anfractibus quinis, convexis; aperturâ ellipticâ. *Hab.* Charlotte Lake, Columbia Co. New York.—*Dr. Griffith.*

Lymnea Nuttalliana. Testâ ovato-conicâ, subtenui, striatâ, subdiaphanâ, pallido-fuscâ, imperforatâ; spirâ breviusculâ, apice rufâ; suturis impressis; anfractibus senis, convexis; aperturâ ovatâ, inflatâ, intus fasciatâ. *Hab.* Oregon.—*Prof. Nuttall.*

Lymnea Bulimoides. Testâ ovato-conicâ, subtenui, lævi, nitidâ, diaphanâ, fusco-luteâ, minutè perforatâ; spirâ breviusculâ; suturis parvis; anfractibus quinis subconvexis; aperturâ ovatâ. *Hab.* Oregon.—*Prof. Nuttall.*

Lymnea exigua. Testâ subfusiformi, tenui, striatâ, subdiaphanâ, pallido-luteâ, perforatâ; spirâ breviusculâ; suturis impressis; anfractibus quinis, subconvexis; aperturâ ellipticâ. *Hab.* Tenn.—*Dr. Troost.*

Lymnea planulata. Testâ ovato-conicâ, tenui, lævi, subdiaphanâ, fuscâ, perforatâ; spirâ breviusculâ; suturis impressis; anfractibus quinis, convexis; aperturâ parvâ, ovatâ. *Hab.* White Sulphur Springs, Va.—*P. H. Nicklin.*

Lymnea fusiformis. Testâ fusiformi, subcrassâ, crebrè-striatâ, pallido-luteâ, imperforatâ; spirâ breviusculâ; suturis leviter impressis; anfractibus senis, planulatis; aperturâ angusto-ellipticâ. *Hab.* Niagara River, Lewistown, N. Y. *Tobias Wagner.*

Lymnea rustica. Testâ subfusiformi, tenui, imperforatâ; spirâ sub-elevatâ; suturis impressis; anfractibus quinis, subconvexis; aperturâ angusto-ellipticâ. *Hab.* Poland, Ohio.—*Dr. Kirtland.*

Lymnea plica. Testâ turritâ, subtenui, luteâ, striatâ, imperforatâ; spirâ sub-elevatâ; suturis impressis; anfractibus quinis, convexis; aperturâ parvâ, ellipticâ. *Hab.* Tennessee.—*Dr. Troost.*

Lymnea coarctata. Testâ fusiformi, tenuissimâ, obsoletè striatâ, diaphanâ, corneâ, imperforatâ; spirâ brevi, mucronatâ; suturis leviter impressis; anfractibus quaternis, subplanulatis; aperturâ grandi, ovatâ. *Hab.* Newport, R. I.—*Col. Totten, U. S. Army.*

Lymnea casta. Testâ subfusiformi, subcrassâ, crebrè-striatâ, luteâ, perforatâ; spirâ subelevatâ, acuminatâ; suturis impressis; anfractibus senis, convexis; aperturâ grandi, ovatâ. *Hab.* Poland, Ohio.—*Dr. Kirtland.*

Lymnea parva. Testâ subturritâ, tenui, lævi, diaphanâ, corneâ, subperforatâ; spirâ elevatâ; suturis impressis; anfractibus quinis, convexis; aperturâ ellipticâ. *Hab.* Cincinnati, Ohio.—*T. G. Lea.*

Lymnea curta. Testâ subturritâ, subtenui, nitidâ, subdiaphanâ, luteâ, perforatâ; spirâ elevatâ; suturis impressis; anfractibus senis, convexis; aperturâ parvâ, ellipticâ. *Hab.* Cincinnati, Ohio.—*T. G. Lea.*

Lymnea strigosa. Testâ longò-ovatâ, subobliquâ, diaphanâ, striatâ, corneâ, tenui, imperforatâ; spirâ brevi; suturis impressis; anfractibus quinis, subconvexis; aperturâ ovatâ. *Hab.* Near Cincinnati, Ohio.—*T. G. Lea.*

Lymnea Kirtlandiana. Testâ turritâ, tenui, irregulariter striatâ, pallido-corneâ, imperforatâ, elevatâ; spirâ attenuatâ; suturis impressis; anfractibus senis, subconvexis; aperturâ angusto-ellipticâ. *Hab.* Poland, Ohio.—*Dr. Kirtland.*

Lymnea rubella. Testâ ovato-conicâ, tenui, lævi, nitidâ, diaphanâ, rubellâ,

imperforatâ; spirâ breviusculâ; suturis parvis; anfractibus quinis, subconvexis; aperturâ subgrandi, ovatâ. *Hab.* Oahu.—*Prof. Nuttall.*

Paludina regularis. Testâ subglobosâ; subcrassâ, virido-corneâ, lævi, imperforatâ; spirâ brevissimâ; suturis impressis; anfractibus quinis, convexis; aperturâ magnâ, ovatâ, intus cæruleâ. *Hab.* Ohio?—*T. G. Lea.*

Paludina obtusa. Testâ subcylindraceâ, subtenui, tenebroso-viridi, lævi, minutè perforatâ; spirâ brevi, ad apicem valdè obtusâ; suturis impressis; anfractibus quaternis, convexis; aperturâ parvâ, subrotundâ. *Hab.* Ohio.—*Dr. Kirtland.*

Paludina Troostiana. Testâ ventricoso-conoideâ, tenui, pellucidâ, luteo-corneâ, lævi, perforatâ; spirâ brevi; suturis valdè impressis; anfractibus quaternis convexis; aperturâ magnâ, rotundatâ, albâ. *Hab.* Tenn.—*Dr. Troost.*

Anculosa Troostiana. Testâ ovato-conicâ, crassâ, minutè rugosâ, tenebroso-fuscâ; spirâ subelevatâ; suturis subimpressis; anfractibus planulatis; aperturâ rotundâ, intus cæruleâ; columellâ crassâ, vel albâ vel carneâ. *Hab.* Tenn.—*Prof. Troost.*

Anculosa gibbosa. Testâ subglobosâ, gibbosâ, crassâ, subnigrâ, crebrè-striatâ; spirâ brevi; suturis impressis; anfractibus subplanulatis; aperturâ subquadrangulari, vel carneâ vel albidâ. *Hab.* Tenn.—*Prof. Troost.*

Anculosa dentata. Testâ subglobosâ, crassâ, subnigrâ; spirâ brevi, obtusâ; suturis impressis; anfractibus convexis; aperturâ magnâ, subrotundâ; columellâ crassâ, dentatâ. *Hab.* Vicinity of Richmond, Va.—*J. A. Warder, M.D.*

Anculosa carinata. Testâ ovato-conoideâ, carinatâ, tenebroso-olivaceâ; spirâ breviusculâ; suturis parvis; anfractibus senis; aperturâ parvâ, rotundâ, intus albidâ, sulcatâ; columellâ subcrassâ, purpureâ. *Hab.* Roanoke River, Lafayette —*J. A. Warder, M.D.*

Anculosa variabilis. Testâ obtuso-conoideâ, crassâ, vel fasciatâ vel corneâ vel carinatâ vel lævi; suturis linearibus; anfractibus senis, planulatis; aperturâ magnâ, subrotundâ; columellâ crassâ, vel albâ vel purpureâ. *Hab.* Roanoke River, Lafayette.—*J. A. Warder, M.D.*

Amnicola orbiculata. Testâ orbiculari, subtenui, luteolâ, lævi, umbilicatâ; spirâ brevi; suturis valdè impressis; anfractibus quinis, inflatis; aperturâ magnâ, rotundâ. *Hab.* Springfield, Ohio, and Schuylkill? near Philadelphia.—*T. G. Lea.*

Amnicola parva. Testâ obtuso-conicâ, subtenui, luteolâ, lævi, umbilicatâ; spirâ brevi; suturis impressis; anfractibus quaternis, inflatis; aperturâ magnâ, subrotundâ. *Hab.* Springfield, Ohio.—*T. G. Lea.*

Io tenebrosa. Testâ fusiformi, subtenui, subnigrâ, lævi; spirâ conicâ; suturis vix impressis; anfractibus senis, subplanulatis; aperturâ irregulariter pyriformi, intus purpureâ. *Hab.* Tennessee.—*S. M. Edgar.*

Mr. Lea mentions, that regarding the sexual difference in the family Naïdes as no longer a matter of doubt, his attention had been given to the length of *gestation* and the periods of *parturition*. With this view tables were made of a series of observations, carried through nearly three consecutive years by Mr. T. G. Lea, at Cincinnati. These prove that many species in the same genus differ in their periods. In the course of

the examinations, it was remarked, that in the *U. multiplicatus*, Lea, and the *U. rubiginosus*, Lea, both lobes of the branchiæ were occasionally charged with ova on both sides.

Dr. Bache announced the decease of the Hon. Thomas L. Winthrop, of Mass., a member of the Society, which occurred at Boston on the 21st of February, 1841.

Dr. Patterson communicated a letter from Mr. Walker, dated 20th Feb., 1841, relating to the formulæ developed and used by him in his paper, entitled "Researches concerning the Periodical Meteors of August and November;" which was ordered to be deposited in the archives of the Society, with the paper to which it relates.

Professor Bache stated, that he had received a letter from Dr. Locke, of Cincinnati, relating to the Magnetic Observations made by the author, and published in the Society's Transactions and Proceedings; the matter of which he communicated to the Society, in accordance with the supposed wish of Dr. Locke.

The Secretaries, as a Committee to cause the Records and Documents of the Society to be arranged and bound, presented their Report, accompanied by a letter from J. Francis Fisher, Esq., who had been one of the Secretaries at the time when this duty was assigned to them, and upon whom the performance of it was devolved by them.

The Records and Documents presented with the report, are comprised in 19 large quarto, and 2 folio volumes, and are arranged in order of subjects, as follows:

I. Nominations of Members.
II. Letters of Acknowledgment from Members Elect.
III. Miscellaneous Correspondence.
IV. V. VI. Letters announcing Donations to the Library; and
VII. To the Cabinet.
VIII. Letters acknowledging Donations.
IX. Reports of Committees and Board of Officers.
X. Reports of Committees on Communications.
XI. MS. Communications on Mathematics and Astronomy.
XII. MS. Communications on Natural History, Fossil Remains, Mineralogy, and Geology.

XIII. MS. Communications on Natural Philosophy, Chemistry and Meteorology.

XIV. MS. Communications on Medicine, Anatomy and Physiology.

XV. MS. Communications on Mechanics, Machinery and Engineering.

XVI. MS. Communications on Trade, Commerce and Manufactures, Agriculture and Husbandry, and Economics.

XVII. MS. Communications on Philology, Literature, Antiquities, Geography and Education.

XVIII. The MS. draughts of the Judicial Opinions of Chief Justice Marshall, in the Circuit Court of the U. S., presented to the Society some years ago, by Mr. Brockenbrough of Richmond, Va. form this Volume.

Three other volumes contain: I. The Minutes of the Am. Phil. Society, previous to its union with the Am. Soc. for Promoting Useful Knowledge, from Jan. to Dec., 1768. II. and III. The Minutes of the Society under its present organization, from Jan., 1774, to June, 1787, inclusive, heretofore wanting; which Mr. Fisher has happily supplied by collating numerous memoranda, and occasional records found by him among the ancient papers of the Society.

In conformity to a provision of the Laws, the following stated appropriations were made for the current year:—

For the Hall, $200.

For the purchase of Journals, $200.

For binding, $100.

For current expenses, $550.

Stated Meeting, March 19.

Present, thirty-one members.

Mr. Du Ponceau, President, in the Chair.

Letters were read from the Secretary of the Royal Asiatic Society, dated Dec. 5, 1840, and from the Secretary of the Horticultural Society of London, dated Dec. 1, 1840, acknowledging the receipt of Part I. of Vol. VII., of the Transactions of this Society.

The following donations were announced:—

FOR THE LIBRARY.

A Continuation to the Alphabetical Index of the Matter contained in the Philosophical Transactions of the Royal Society of London, from Vol. LXXI. to Vol. CXX., 1781 to 1830. 2 Vols. 8vo.—*From the Society.*

Address of the Marquis of Northampton, President, &c. &c., read at the Anniversary Meeting of the Royal Society, on Saturday, Nov. 30, 1840. 8vo.—*From the same.*

Memoirs of the Royal Astronomical Society of London. Vol. XI. 1840. 4to.—*From the Society.*

Proceedings of the Royal Astronomical Society of London. No. 10. Dec. 1840. 8vo.—*From the same.*

On the Minute Structure and Movements of Voluntary Muscle, by William Bowman, Esq., Demonstrator of Anatomy in King's College, London, &c. 1840. 4to.—*From the Author.*

Experimental Researches on the Strength of Pillars of Cast Iron and other Materials, by Eaton Hodgkinson, Esq. London. 1840. 4to.—*From the Author.*

Niles's Weekly Register, Sept. 1836 to Sept. 1837. 2 Vols. 4to.—*From the Editor.*

Niles's National Register, Sept. 1837 to Sept. 1840. 6 Vols. 4to.—*From the Editor, Jeremiah Hughes, Esq.*

The History of Harvard University, by Josiah Quincy, LL.D., President of the University, Cambridge. 1840. 2 Vols. 8vo.—*From the Author.*

God, the Lord of All; a Missionary Tract in the Chinese Language. 8vo.—*From the Rev. B. H. and A. Bingham.*

O Auxiliador da Industria Nacional, &c. &c., anno 1840. Rio de Janeiro, 1840. 6 Nos. 8vo. Jan. to June.—*From Mr. J. S. Rebello.*

Tijdschrift voor Natuurlijke Geschiedenis en Physiologie; uitgegeven door J. Van der Hoeven, M.D., &c., en W. H. de Vriese, M.D., &c. Amsterdam, 1840. 8vo.—*From the Editors.*

The Eclectic Journal of Medicine, edited by John Bell, M.D., &c. &c. Vol. IV. Nov. 1839 to Oct. 1840. Philadelphia. 8vo.—*From the Editor.*

The Select Medical Library, edited by John Bell, M.D., &c. &c. 5 Vols. Philadelphia, 1839, 1840. 8vo.—*From the same.*

Biographical Account of John Hadley, Vice-President of the Royal

Society, &c., and of his Brothers, George and Henry Hadley. London. 8vo.—*From Dr. Robert Hare.*

Annual Report of the Geologist of Maryland, 1840. 8vo.—*From the Author, Dr. J. T. Ducatel.*

The Theory of Money and Banks investigated; by George Tucker, Professor of Moral Philosophy in the University of Virginia, &c. &c. Boston, 1839. 12mo.—*From the Author.*

Epistle to Joseph John Gurney, on the Society of Friends; by Benjamin Hornor Coates, M.D. Philadelphia, 1841.—*From the Author.*

Rambles in Europe in 1839, with Sketches of Prominent Surgeons, &c. &c. &c.; by William Gibson, M.D., Professor of Surgery in the University of Pennsylvania, &c. Philadelphia, 1841. 12mo.—*From the Author.*

Professor Bache presented to the notice of the Society, the curves representing the Magnetic Observations made at Washington City, on the 6th of January last, and the five days succeeding, a drawing of which he had received from Lieut. Gilliss, the director of the Magnetic Observatory at that station.

Dr. Patterson presented to the Society a resolution recently adopted by the Controllers of the Public Schools, agreeing to deposite a transit instrument imported by them, for five years, from the 1st instant, in the Society's Observatory, on certain conditions. The resolution was referred to the Committee on the Observatory.

Dr. Mitchell referred to the experiments, in which he is still engaged with Dr. Hare, on the electricity produced during vaporization. He mentioned that the solid, formed when carbonic acid which has been liquefied by pressure escapes from the containing vessel, is found to have positive, and the receiver negative electricity. He proposes to communicate other results of these experiments at a future meeting of the Society.

Stated Meeting, April 2.

Present, twenty-three members.

Judge HOPKINSON, Vice-President, in the Chair.

Letters were read—

From M. Guizot, dated Paris, Dec. 14, 1840; from Mr. John L. Stephens, dated New York, March 13, 1841; and from M. Pierre de Angelis, dated Buenos Ayres, Jan. 8, 1841, acknowledging the honour done them by their election as members of the Society:—

From the Secretary of the Geological Society of London, dated Jan. 7, 1841; from the Secretary of the Royal Asiatic Society, dated Jan. 2, 1841; from the Secretary of the Royal Geographical Society of London, dated Nov. 21, 1840; and from the Secretary of the Royal College of Surgeons, in London, dated Feb. 5, 1841, severally acknowledging the receipt of donations from this Society.

The following donations were received:—

FOR THE LIBRARY.

Astronomical Observations made at the Royal Observatory, Edinburgh, for the Year 1837. By Thomas Henderson, F.R.S., &c. Edinb. 1840. 4to.—*From the Royal Society of London.*

Annuaire Magnétique et Météorologique du Corps des Ingénieurs des Mines de Russie, &c. &c. Année, 1838. St. Petersburg, 1840. 4to.—*From the Imperial Academy of St. Petersburg.*

Journal of the Asiatic Society of Bengal. N. S. No. 18. 1840. 8vo.—*From the Society.*

Proceedings of the Royal Astronomical Society. Vol. V. Nos. 10 and 11. Dec. 1840, Jan. 1841. 8vo.—*From the Society.*

Journal of the Franklin Institute. Third Series. Vol. I. No. 3. March, 1841. 8vo.—*From the Institute.*

The American Quarterly Register, conducted by B. B. Edwards and W. Cogswell. Vol. XIII. No. 3. Feb. 1841. 8vo.—*From the Editors.*

Twenty-third Annual Report of the Controllers of the Public Schools

of the City and County of Philadelphia. 1841. 8vo.—*From Mr. G. M. Wharton.*

The American Medical Library and Intelligencer. By Robley Dunglison, M.D., &c. &c. Vol. IV. Nos. 21 & 22, Feb., 1841. 8vo.—*From the Editor.*

A Discourse on the Character, Properties, and Importance to Man, of the Natural Family of Plants, called Gramineæ or True Grasses. By Wm. Darlington, M.D. West Chester, 1841. 8vo.—*From the Author.*

Minutes of the General Assembly of the Presbyterian Church in the United States of America. For 1836, 1837, 1838, 1840. Philadelphia. 8vo.—*From Mr. Kane.*

A Dictionary, Hindoostanee and English. By Capt. Joseph Taylor, revised by W. Hunter, M.D. Calcutta, 1808. 2 Vols. 4to.—*From Mr. G. Henshaw Belcher.*

Coleccion de Obras y Documentos relativos a la Historia Antigua y Moderna de las Provincias del Rio de la Plata. Par Pedro de Angelis. Tomo Sexto. Buenos Aires, 1837. Fol.—*From the Author.*

The New Testament, with References to Parallel Passages, &c. &c. New York, 1832.—*From Mr. Vaughan.*

FOR THE CABINET.

A large Specimen of the Red Pipe Stone, from the country of the Sioux Indians.—*From Mr. J. N. Nicollet.*

Dr. Patterson read a paper, entitled "On the Expansion of the Function $x + h$, by Pike Powers, of the University of Virginia;" which was referred to a Committee.

Mr. Walker read a paper, entitled "Astronomical Observations made at Hudson Observatory, lat. 41° 14′ 40″ N., and long. 5° 25′ 45″ W., by Elias Loomis, Prof. Math. and Nat. Phil. in Western Reserve College;" which was referred to a Committee.

Dr. Patterson described the arrangement of a Thermometer, which he had caused to be attached to a steam boiler at the United States' Mint, for the purpose of indicating the pressure of the steam by reference to the temperature of the water.

The bulb of the thermometer was immersed in a bath of mercury, contained in a bent iron tube passing through the head of the boiler

below the water line; the stem of the thermometer being curved at its lower extremity to correspond with the tube. The scale was graduated as an indicator of pressure in accordance with the results of the experiments made by the Franklin Institute of Pennsylvania. A comparison of its indications with those of a very well made and carefully graduated safety valve, attached to the same boiler, had proved entirely satisfactory.

Dr. John Locke, of Cincinnati, a member of the National Institution, visiting the Society, was invited to make a communication explanatory of the "Safety Guard" of Mr. Cadwallader Evans, of Pittsburg, of which he presented a working model to the notice of the Society.

After some observations on the causes of accidents to high pressure boilers with flues, most of which were referred either to over pressure of saturated steam, or to over heating the flues when the water is low; and a brief historical sketch of the introduction of fusible alloys in aid of the safety valves and gauge cocks; Dr. Locke called the attention of the Society to the model of Mr. Evans's invention.

In this, the fusible alloy is placed in the bottom of an iron tube, which is inserted into the boiler and attached to it steam-tight by a flange at the top, or outer extremity, while the end containing the fusible metal is placed in contact with the upper part of the flue, so as to receive the greatest heat of the part first exposed by low water. A key, like the key of a common lock, pivoted in the alloy, continues fixed while the alloy remains solid, but is free to turn as soon as it fuses. The stem of the key, passing through a collar, terminates on the outside in a cylindrical head or pulley. To this a chain is fixed, which, after being wound round the cylindrical head, passes over a simple pulley at the end of the lever of the safety valve, and there suspends the weight.

While the alloy remains solid, the action of this weight is the same as if it were attached to the lever itself, as in the common arrangement of the safety valve. When the temperature of the "guard" reaches the point for which the alloy was composed; in consequence either of the excessive temperature of the steam that surrounds it, or of the water sinking below the top of the flue on which it rests; the alloy melts: the weight acting on the chain turns the loosened key, the chain is unwound, and the weight, descending upon a platform placed to receive it, relieves the safety valve of its load.

The "safety guard" has the recommendation of great simplicity,

and of placing it out of the power of the engineer to transcend the assigned limit of pressure on the boiler. When it goes into action, it stops the engine for the time, but permits the motion to be renewed as soon as the cause of danger is removed either by the escape of steam or the cooling of the flue. The alloy having again become solid, the chain is passed round the cylinder anew, and the engine proceeds as before.

Dr. Locke illustrated these remarks by successful experiments with the working model. He added, that the apparatus, with different modifications which he described, has been applied to more than twenty boats on the Ohio and Mississippi rivers, during a length of time sufficient to test its practical usefulness, and that it is rapidly gaining popularity with the proprietors of steam-boats, and with the public.

Professor Bache, at the instance of Dr. Locke, gave a brief history of the different applications of fusible metal to steam-boilers.

He stated that the experiments of the Franklin Institute had proved the necessity of preventing the steam from pressing directly on the fusible metal, in consequence of the liability of the metal to separate into portions of different fusibility when submitted to such pressure. He mentioned that Mr. Evans had adopted the same mode of applying fusible metal as the Committee of the Institute, and at about the same time. Professor Bache then described the less perfect apparatus first devised by Mr. Evans, and alluded to one of his own which he had himself published subsequently. He referred to the peculiarities of the arrangement exhibited by Dr. Locke, and expressed his satisfaction at the prospect of the safety guard being introduced into general use, under the auspices of a practical mechanic like Mr. Evans.

Mr. Walker mentioned some strictures which he had received from a correspondent, upon a paper, by Miss Morris "On the Hessian Fly," now in the press of the Society, and of which an abstract was published in its Proceedings for December last.

Dr. Coates argued, that the history of the larva of the Hessian Fly could by no means be considered settled; and that the subject was properly open for present and future examination.

This he endeavoured to support by pointing out inconsistencies in the descriptions of the best writers; remarking, that Mr. James Worth,

and Baron Von Menninger had seen larvæ similar to that described by Miss Morris; the latter of which were thought by Curator Köllar to produce the Cecidomyia Destructor of Say, although in Germany, in which that species was not hitherto known to exist; and some of the former of which were found by Mr. Worth, to produce pupæ under the sheath of the leaf, as the Cecidomyia does. Other illustrations were drawn by Dr. Coates, from nearly related species; and it was urged that the law by which insects possess a power of accommodation to circumstances, in depositing their eggs in unusual and diversified places, to the great modification of the larva, had never been shown to be inapplicable to this case.

Part of the objections of Mr. Walker's correspondent, were referred by Dr. Coates to an error in the minutes, and which had been transferred to the published Proceedings of the Society; by which Miss Morris was incorrectly represented as mentioning in her paper the parasitic insect which stings the Hessian Fly. In the opinion of Mr. Westwood, as stated by Dr. C., this parasite, generally known as a Ceraphron, should be referred to the genus Pteromalas.

Mr. Lea, on behalf of the Committee of Publication, laid upon the table Part 3, Vol. VII. of the Transactions of the Society, which completes the volume.

In accordance with a recommendation contained in a Report from the Secretaries, they were discharged from the further consideration of the subject referred to them by the Society's resolution of 15th January last.

Stated Meeting, April 16.

Present, forty-seven members.

Mr. Du Ponceau, President, in the Chair.

Major Graham, of the United States' Army, and Professor Alexander, of Princeton, N. J., members elect, were introduced, signed the Laws, and took their seats.

Letters were read—

From Mr. Francisco Martinez de la Rosa, dated Paris, 15th Feb. 1841, making acknowledgments for the honour of his election to membership:—

From the Secretary of the Royal Society of Sciences, Agriculture and Arts, of Lille, dated 2d Feb. 1841, proposing a correspondence and interchange of publications with this Society; which was, on motion, referred to a committee:—

From the President of Harvard University, dated 9th April, 1841, acknowledging the receipt of the Transactions, N. S. Vol. VII. Part 2.

The following donations were announced:—

FOR THE LIBRARY.

Journal of the Asiatic Society of Bengal. Nos. 100, 101. Calcutta, 1840. 8vo.—*From the Society.*

Transactions of the Agricultural and Horticultural Society of India. Vol. VII. Calcutta, 1840. 4to.—*From the Society.*

Constitution and Laws of the New York Historical Society. New York, 1839. 8vo.—*From the Society.*

Proceedings of the National Institution for the Promotion of Science. Washington, 1841. 8vo.—*From the Institution.*

History of Harvard University from its Foundation in 1638, to the Period of the American Revolution. By Benjamin Peirce, &c. &c. Cambridge, 1833. 8vo.—*From the President and Fellows.*

Fifty-fourth Annual Report of the Regents of the University of New York. Albany, 1841. 8vo.—*From the Regents.*

Catalogue, &c., of Bowdoin College and the Medical School of Maine. Brunswick, 1841. 8vo.—*From Professor D. A. Goodwin.*

The American Medical Library and Intelligencer. Edited by Robley Dunglison, M.D., &c. &c. Vol. IV. No. 23.—*From the Editor.*

Historical Letters on the First Charter of Massachusetts. By Abel Cushing, &c. &c. Boston, 1839. 16mo.—*From the Author.*

The American Journal of Medical Sciences, conducted by Isaac Hays, M.D. &c. &c. April, 1841.—*From the Editor.*

The American Journal of Science and Arts, conducted by Benjamin Silliman and B. Silliman, Jr. N. S. No. 2. April, 1841.—*From the Editors.*

A Sermon preached by Rev. Jared L. Elliott, before the Officers of the U. S. Exploring Expedition, on the Occasion of the Death of Lieut. J. A. Underwood and Midshipman Wilkes Henry. Honolulu, Oahu, 1840.—*From Mr. Titian R. Peale.*

The Northern Light. Vol. I. No. 1. Albany, N. Y. 1841.—*From Dr. T. Romeyn Beck.*

Dr. Bache announced the death of Dr. Samuel Colhoun, a member of the Society, who died on the 7th of April, 1841, aged fifty-four.

Mr. Walker read a paper, entitled "A Continuation of Astronomical Observations made at Hudson Observatory, by Elias Loomis, Professor of Mathematics and Natural Philosophy at Western Reserve College;" which was referred to a committee.

Mr. Walker read a letter from Mr. Simeon Borden, dated Boston, 6th April, 1841, giving the results of the Trigonometrical Survey of the State of Massachusetts, lately completed by him, and those obtained by Mr. Paine's Chronometrical Survey of the same State; which was referred to a committee.

Professor S. Alexander, of Princeton, made an oral communication on the subject of the Meteor of March 15th.

He prefaced his communication by a notice of the arguments, as stated by M. Arago, which tend to show that aerolites cannot be of terrestrial origin; a conclusion which Prof. A. regarded as irresistible: and, in view of it remarked, that he regarded the aerolites themselves as presenting a subject of special interest, inasmuch as whatever might be their origin, they telegraphed to us the fact, that matter such as that with which we were familiar, existed apart from the earth; it having been demonstrated by an analysis of the fragments which have, from time to time, dropped from the bodies in question, that they were composed of materials similar to those which exist upon our planet.

Prof. Alexander described the meteor which he had observed at Princeton.

It was, as he stated, of a white or bluish white colour, except that one half,—the following half of it, as regarded the direction of its apparent motion,—was bordered with red. He observed, moreover, that the atmosphere was so hazy at the time, that even Venus was seen but indistinctly. From a comparison of the relative positions of this planet and the meteor, at the time of the sudden disappearance of the latter, he concluded that its azimuth at that time was 86°, and its altitude 29°. He estimated its apparent diameter to have been somewhat less than half that of the Moon, or about 12′ or 13′. He had seen a newspaper account of observations made of the same me-

teor at New Haven, in which it was stated, that the observed azimuth, at the time of its disappearance, was 68°, and its altitude 11°.

From these elements, it resulted, that the meteor, when it disappeared, must have been 223.35 English miles distant from New Haven; and 131.73 from Princeton. The perpendicular altitude deduced from the New Haven observation, was 48.71 miles; from that at Princeton, 65.79 miles. The diameter of the meteor, from the observation at the latter place, was 0.4598 of a mile.

Prof. Alexander remarked, in conclusion, that these results, in so far as they admitted of a comparison, did not accord very well; and that accounts of other observations were desirable.

Professor Henry mentioned, that he had recently repeated some experiments of Becquerel and Biot on phosphorescence, the results of which demonstrate the existence of an emanation from incandescent bodies, particularly when in an electrical state, of a character not heretofore known. He promised to give a more full account of these at a future meeting of the Society.

The following gentlemen were elected members of the Society.

Major Edward Sabine, V. P. R. S.

Isaac R. Jackson, of Philadelphia.

Professor Roswell Parke, of the University of Pennsylvania.

Dr. Robert Christison, F. R. S. of Edinburgh.

Professor Edward Hitchcock, of Amherst College, Mass.

William Peter, H. B. M. Consul, at Philadelphia.

A. P. de Candolle, of Geneva.